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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/540,196

02/21/2006

Pullabhatla Srinivas

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EXAMINER

DEES, NIKKI H

ART UNIT

PAPER NUMBER

1794

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/540,196	<b>Applicant(s)</b> SRINIVAS ET AL.	
	<b>Examiner</b> Nikki H. Dees	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006 and 20 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>21 February 2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 4, 5, 6 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 1 claims a "few drops" of an emulsifier. It is unclear how many drops are considered a "few" as the volume of a drop may vary depending on the dropper.

4. Claim 4 claims the ratio of 0.1 to 1.0:2000 2-acetyl-1-pyrroline:binder. The basis of this ratio (e.g. weight or volume) is unclear. For purposes of examination, the ratio will be considered to be on the basis of weight.

5. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely

Art Unit: 1794

exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 5 recites the broad recitation "a group consisting of Tween 80 and Tween 60", and the claim also recites "more preferably Tween 60" which is the narrower statement of the range/limitation.

6. Claim 6 claims the 2-acetyl-1-pyrroline prepared by known methods. It is unclear how the 2-acetyl-1-pyrroline would be prepared, other than by known methods. If Applicants wish to exclude 2-acetyl-1-pyrroline extracted from rice, the examiner suggests Applicants amend the claim to require synthetic 2-acetyl-1-pyrroline.

7. Claim 10 claims rice and "related products." It is unclear what constitutes a product "related" to rice. For purposes of examination, "related products" is considered to encompass all foodstuffs.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1794

9. Claims 1-7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Partanen et al. (Partanen, R. Ahro, M., Hakala, M., Kallio, H., Forssell, P. 2002. Microencapsulation of caraway extract in  $\beta$ -cyclodextrin and modified starches. Eur. Food Res. Technol. Vol. 214. pp. 242-247) in view of Buttery et al. (4,522,838) and Wright (Wright, J. 2002. "Creating and Formulating Flavors." Food Flavour Technology. Ed. A. J. Taylor. CRC Press. pp. 1-26).

10. Partanen et al. teach a method for encapsulating caraway extract. The extract is added to a solution containing a starch which is an emulsifying starch. Gum arabic (gum acacia) is also used. The mixture was homogenized for 3 minutes (Emulsification of caraway extract, p. 243). The solution was then spray dried at 200°C inlet temp and 80°C outlet temp (Spray-drying of caraway extract emulsions, p. 243).

11. Partanen et al. are silent as to the method being used with 2-acetyl-1-pyrroline. They are also silent as to using the specific emulsifiers of claim 5 and the spray drying conditions of claim 9.

12. Buttery et al. teach 2-acetyl-1-pyrroline for use as a food flavoring (Abstract). They state that the 2-acetyl-1-pyrroline may be combined with carriers including starch for addition to foodstuffs (col. 2 lines 54-64). Buttery et al. go on to teach that 2-acetyl-1-pyrroline is soluble, and stable, in both ethanol and water, but the pure compound degrades (col. 3 lines 20-24).

13. The combination of Partanen et al. and Buttery et al. is silent as to spray drying conditions for 2-acetyl-1-pyrroline.

Art Unit: 1794

14. Wright teaches that it is common to spray-dry flavors to provide the flavors with improved stability (pp. 15-16). He also teaches that the processing conditions should be set for each flavor (p. 17).

15. As shown by Buttery et al., the pure compound of 2-acetyl-1-pyrroline is not stable and degrades; it needs to be dissolved or combined with other material for stability. Partanen et al. teach encapsulation of flavorings to stabilize them. Thus, it would have been obvious to use the method of Partanen et al. to stabilize the compound of Buttery et al. in order that it may be more storage stable. The ratio of 2-acetyl-1-pyrroline to binder could have been adjusted by one of ordinary skill with no more than routine experimentation in order to result in a suitably stable dried flavor.

16. Further, one of ordinary skill in the art at the time the invention was made would have been able to optimize the spray-drying conditions for the flavor 2-acetyl-1-pyrroline with nothing more than routine experimentation, as is taught by Wright. The spray-dried flavor would have been expected to have improved resistance to oxidative degradation. As all of the flavor, the additional components, and spray-drying were known in the art at the time the invention was made, one of ordinary skill would have been able to combine the elements to provide the predictable result of a spray-dried 2-acetyl-1-pyrroline without undue experimentation and with the reasonable expectation of a suitable preserved flavor molecule.

17. Regarding claim 5, Partanen et al. teach their composition as emulsions to be spray dried (Emulsification of caraway extract, p. 243). As the prior art teaches their composition in the form of an emulsion, one of ordinary skill would have found it obvious

Art Unit: 1794

to use known emulsifiers to stabilize the emulsion. The emulsifiers claimed by Applicant are well-known and widely used in the art; therefore, their use to stabilize the emulsion of Partanen et al. would have been considered obvious to one of ordinary skill at the time the invention was made. Undue experimentation would not have been required to incorporate the emulsifier, and there would have been a reasonable expectation that it would have functioned as expected to stabilize the emulsion.

18. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Partanen et al. (Partanen, R. Ahro, M., Hakala, M., Kallio, H., Forssell, P. 2002.

Microencapsulation of caraway extract in  $\beta$ -cyclodextrin and modified starches. Eur. Food Res. Technol. Vol. 214. pp. 242-247) in view of Buttery et al. (4,522,838) and Gasser et al. (4,073,961).

19. The combination of Partanen et al. in view of Buttery et al. teaches a process for stabilizing 2-acetyl-1-pyrroline as detailed above.

20. The combination is silent as to vacuum shelf drying of the composition.

21. Gasser et al. teach the drying of a bouillon flavor base using a vacuum drying cabinet (vacuum shelf dryer) (Example 1).

22. One of ordinary skill in the art at the time the invention was made would have recognized that vacuum shelf drying was commonly known in the art of flavor preparation. It would have been obvious to substitute vacuum shelf drying for spray drying as both methods were known in the art for drying food additives. No more than routine optimization would have been required to select the temperature and vacuum for

Art Unit: 1794

the drying of the composition. The final product would have been expected to be suitably dried and stabilized.

23. Claims 1-7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leshik (4,307,117) in view of Buttery et al. (4,522,838) and Wright (Wright, J. 2002. "Creating and Formulating Flavors." Food Flavour Technology. Ed. A. J. Taylor. CRC Press. pp. 1-26).

24. Leshik teaches a method for stabilizing a colorant. The method comprises dissolving water soluble components in water and homogenizing (col. 3 lines 50-55). The water soluble components include film forming encapsulents, including water soluble starches, modified starches, and gum arabic (gum acacia) (col. 4 lines 7-12). An emulsifier is added to form a good dispersion. Preferred emulsifiers include polysorbate 60 and polysorbate 80 (col. 4 lines 36-40). Leshik further teaches "[T]here are no numerical ranges of universal application for either the amount of water-soluble film-forming encapsulant or the dispersant, as these will depend on the specific materials, processing conditions, and end use requirements." (col. 4 lines 47-51). The mixture is then spray dried and used to color food products (Abstract).

25. Leshik is silent as to his method being used with 2-acetyl-1-pyrroline. He is also silent as to using spray drying conditions as claimed.

26. Buttery et al. teach 2-acetyl-1-pyrroline for use as a food flavoring (Abstract). They state that the 2-acetyl-1-pyrroline may be combined with carriers including starch for addition to foodstuffs (col. 2 lines 54-64). Buttery et al. go on to teach that 2-acetyl-



Art Unit: 1794

1-pyrroline is soluble, and stable, in both ethanol and water, but the pure compound degrades (col. 3 lines 20-24).

27. The combination of Leshik and Buttery et al. is silent as to spray drying conditions for 2-acetyl-1-pyrroline.

28. Wright teaches that it is common to spray-dry flavors to provide the flavors with improved stability (pp. 15-16). He also teaches that the processing conditions should be set for each flavor (p. 17).

29. As shown by Buttery et al., the pure compound of 2-acetyl-1-pyrroline is not stable and degrades; it needs to be dissolved or combined with other material for stability. Leshik teaches the encapsulation of flavorings to stabilize them. Thus, it would have been obvious to use the method of Leshik to stabilize the compound of Buttery et al. in order that it may be more storage stable. The ratio of 2-acetyl-1-pyrroline to binder could have been adjusted by one of ordinary skill with no more than routine experimentation in order to result in a suitably stable dried flavor.

30. Further, one of ordinary skill in the art at the time the invention was made would have been able to optimize the spray-drying conditions for the flavor 2-acetyl-1-pyrroline with nothing more than routine experimentation, as is taught by Wright. The spray-dried flavor would have been expected to have improved resistance to oxidative degradation. As all of the flavor, the additional components, and spray-drying were known in the art at the time the invention was made, one of ordinary skill would have been able to combine the elements to provide the predictable result of a spray-dried 2-acetyl-1-

Art Unit: 1794

pyrroline without undue experimentation and with the reasonable expectation of a suitable preserved flavor molecule.

31. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leshik (4,307,117) in view of Buttery et al. (4,522,838) and Gasser et al. (4,073,961).

32. The combination of Leshik in view of Buttery et al. teaches a process for stabilizing 2-acetyl-1-pyrroline as detailed above.

33. The combination is silent as to vacuum shelf drying of the composition.

34. Gasser et al. teach the drying of a bouillon flavor base using a vacuum drying cabinet (vacuum shelf dryer) (Example 1).

35. One of ordinary skill in the art at the time the invention was made would have recognized that vacuum shelf drying was commonly known in the art of flavor preparation. It would have been obvious to substitute vacuum shelf drying for spray drying as both methods were known in the art for drying food additives. No more than routine optimization would have been required to select the temperature and vacuum for the drying of the composition. The final product would have been expected to be suitably dried and stabilized.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikki H. Dees whose telephone number is (571) 270-

Art Unit: 1794

3435. The examiner can normally be reached on Monday-Friday 7:30-5:00 EST  
(second Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nikki H. Dees/  
Examiner, Art Unit 1794  
/Lien T Tran/  
Primary Examiner, Art Unit 1794

Nikki H. Dees  
Examiner  
Art Unit 1794

Application/Control Number: 10/540,196  
Art Unit: 1794

Page 11